

**REMARKS**

Claims 1-25, and 64-117 are pending in the application. In this response, claims 3, 8-12, 85, 90-92, 105 and 110-112 are canceled. Claims 1, 4, 5, 83, 86, 87, 103, 106 and 107 are amended. Claims 11, 12 and 64-82 have been allowed by the Examiner. No new matter is believed to be added by this amendment. Applicants submit that all of the claims are now in a form for allowance.

Applicants sincerely wish to thank the Examiner for the indicated allowance of claims 11, 12 and 64-82.

**Claim Rejections – 35 U.S.C. § 102**

In the Office Action, claims 1-5, 7, 8, 15-17, 21, 22, 24 and 25 were rejected under 35 USC 102(b) as being anticipated by Tiefenthaler et al. (USPN 5,071,248, “Tiefenthaler”).

In the Office Action, claims 1-10, 14, 15, 17, 21, 22, 24 and 25 were rejected under 35 USC 102(b) as being anticipated by Flanagan et al. (USPN 5,081,012, “Flanagan”).

In the Office Action, claims 1 and 13 were rejected under 35 USC 102(b) as being anticipated by Lukosz (USPN 5,120,131).

In the Office Action, claims 1-4, 8, 14, 15, 21, 22, 24 and 25 were rejected under 35 USC 102(e) as being anticipated by Attridge (USPN 5,344,784).

In the Office Action, claims 1-3, 8-10, 14-25, 83-85, 90-105, and 110-117 were rejected under 35 USC 102(e) as being anticipated by Groger et al. (USPN 5,577,137).

A proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). The test is the same for a process. Anticipation requires identity between the claimed process and a process of the prior art. The claimed process, including each step thereof, must have been described or embodied, either expressly or inherently, in a single reference. *See, e.g., Glaverbel S.A. v. Northlake Mkt'g & Supp., Inc.*, 45 F.3d 1550, 33 USPQ2d 1496 (Fed. Cir. 1995). Those elements must either be inherent or disclosed expressly. *See,*

*e.g.*, *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 7 USPQ2d 1057 (Fed. Cir. 1988); *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987). For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *See, e.g.*, *Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991). In summary, the single prior art reference must properly disclose, teach or suggest each element of the claimed invention. Moreover, “every element of the claimed invention must be literally present, arranged as in the claim. ... The identical invention must be shown in as complete detail as is contained in the patent claim.” *See, e.g.*, *Richardson v. Suzuki Motor Company Co.* 868 F.2d 1226, 1236 (Fed. Cir. 1989).

As provided above, a claim can be anticipated only if each and every limitation of that claim is found in a single prior art reference. Applicants have amended independent claims 1, 83 and 103 to include an optical coupling element comprised of a waveguide coupler disposed on an upper surface of said waveguide film and opposite said first planar surface of said substrate, wherein said waveguide coupler is further comprised of an input waveguide that is comprised of an optical material having a refractive index  $n_3$  and a thickness of between about 0.5 mm and about 5 mm and a precise spacing layer to evanescently couple light into said waveguide film across said precise spacing layer, said spacing layer comprises an optical material having a refractive index  $n_4$ , where  $n_4 < n_2$  and  $n_4 < n_3$ .

As none of the cite art references (i.e., Tiefenthaler, Flanagan, Lukosz, Attridge and Groger) teach or fairly suggest the above-described optical coupling element, alone or in combination, Applicants respectfully submit that claims 1, 83 and 103 are not anticipated by any of these references, and each are in a form for allowance. Similarly, as claims 2, 4-7, and 13-25 depend either directly or indirectly from allowable independent claim 1; claims 84, 86-89, and 93-102 depend either directly or indirectly from claim 83, and claims 104, 106-109 and 113-117 depend either directly or indirectly from claim 103, Applicants submit that these claims are also in a form for allowance. *See In re Fine*, 5 U.S.P.Q.2d 1569, 1600 (Fed. Cir. 1988) (“Dependent claims are

nonobvious under section 103 if the independent claims from which they depend are nonobvious.”). Using this same rationale, dependent claims cannot be anticipated if the independent claims from which they depend are not anticipated.

**Claim Rejections – 35 U.S.C. § 103**

Claims 86-89 and 106-109 were rejected under 35 USC 103(a) as being unpatentable over Groger in view of Koester (USPN 3,449,037).

Applicants first submit that, for a *prima facie* case of obviousness, the cited prior art references (when combined) “must teach or suggest all the claim limitations” MPEP § 2143. Thus, if the combination of references does not teach each of the claimed limitations, a finding of obviousness fails. In addition, the Patent Office has the burden under § 103 to establish a *prima facie* case of obviousness, which can be satisfied only by showing some objective teaching in the prior art would lead one to combine the relevant teachings of the references. *See In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). As such, an applicant, to overcome an allegation of obviousness, can show that the cited prior art references (when combined) do not teach or suggest all the claim limitations or that there is not an objective teaching in the prior art that would lead one to combine the relevant teachings of the references.

As claims 86-89 (that depend from allowable amended base claim 83) and claims 106-109 (that depend from allowable amended base claim 103) now include the limitation of an optical coupling element comprised of a waveguide coupler disposed on an upper surface of said waveguide film and opposite said first planar surface of said substrate, wherein said waveguide coupler is further comprised of an input waveguide that is comprised of an optical material having a refractive index  $n_3$  and a thickness of between about 0.5 mm and about 5 mm and a precise spacing layer to evanescently couple light into said waveguide film across said precise spacing layer, said spacing layer comprises an optical material having a refractive index  $n_4$ , where  $n_4 < n_2$  and  $n_4 < n_3$ , which is not taught, suggested or made obvious by Groger or Koester, alone or in combination, Applicants submits these claims are now in a form for allowance. See *In re*

*Fine*, 5 U.S.P.Q.2d 1569, 1600 (Fed. Cir. 1988) (“Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious.”).

Second, the Supreme Court has reaffirmed the *Graham* factors for determination of obvious under 35 U.S.C. 103(a). *KSR Int’l Co. v. Teleflex, Inc.* (*KSR*), No 04-1350 (U.S. Apr. 30, 2007). The four factual inquiries under *Graham* require examination of: (1) the scope and contents of the prior art; (2) the differences between the prior art and the claims in issue; (3) the level of ordinary skill in the pertinent art; and (4) the objective evidence of secondary consideration. *Graham v. John Deere (Graham)*, 383 U.S. 1, 17-18, 149 USPQ 459, 467 (1966); see also 35 U.S.C. § 103 (2000).

The Court has further recognized that the requirement for a teaching, suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, which was established by the Court of Customs and Patent Appeals, provides a helpful insight for determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a).

Where an invention is contended to be obvious based upon a combination of elements across different references, one should be able to identify particular reasons that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements. *See, KSR Int’l Co.*, at 14, 15. This requirement prevents the use of “the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.” *Ecolochem, Inc. v. So. Cal. Edison Co.*, 227 F.3d 1361, 1371-72 (Fed. Cir. 2000) (quoting *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999)).

Applicants submit that the current construction of the cited references in the manner provided in the Office Action requires hindsight reasoning, which the Federal Circuit has explicitly rejected. *See In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). As stated above, Groger and Koester, alone or in combination, do not teach the limitation of an optical coupling element comprised of a waveguide coupler disposed on an upper surface of said waveguide film and opposite said first planar surface of said substrate, wherein said waveguide coupler is further comprised of an input

waveguide that is comprised of an optical material having a refractive index  $n_3$  and a thickness of between about 0.5 mm and about 5 mm and a precise spacing layer to evanescently couple light into said waveguide film across said precise spacing layer, said spacing layer comprises an optical material having a refractive index  $n_4$ , where  $n_4 < n_2$  and  $n_4 < n_3$  as found in amended independent claims 83 and 103.. It would not have been obvious to one of ordinary skill in the art to combine Groger in view of Koester, and the subject matter of the limitations not taught by either, to arrive at the presently claimed invention. Applicants earnestly request reconsideration, withdrawal of this rejection, and allowance of claims 86-89 and 106-109.

**Allowable Subject Matter**

Applicants wish to express their appreciation to the Examiner for the indicated allowance of claims 11-12 and 64-82. Applicants note that claims 11-12 are rejected as depending from a rejected base claim, but would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claims.

**Analysis and Amendments**

The Office Action indicates that the reason for allowance of claims 11, 12, and 64-82 is because the prior art of record does not teach or fairly suggest an input waveguide comprising an optical material having a refractive index  $n_3$  and a thickness of between 0.5 mm and about 5 mm and a spacing layer comprising an optical material having a refractive index  $n_4$ , where  $n_4 < n_2$  and  $n_4 < n_3$ , the spacing layer having a thickness selected to optimize evanescent coupling of light from the input waveguide into the waveguide film.

Applicants respectfully submit that amended independent claims 1, 83, and 103 are now in a form for allowance in light of the stated reasons for allowance. Likewise, Applicants submit that the claims that depend from claims 1, 83 and 103, either directly or indirectly, are now in a form for allowance.

**Conclusion**

Claims 1-2, 4-7, 13-25, and 64-84, 86-89, 93-104, 106-109 and 113-117 remain pending in the patent application. Of these pending claims, claims 1, 64, 83 and 103 are independent claims. Because the Applicants respectfully assert that these independent claims are allowable, their dependent claims are also allowable. Thus, Applicants respectfully request allowance of all the pending claims in view of the subsequent remarks regarding the above-mentioned independent claims.

Applicants have previously submitted a Credit Card Payment in the amount of \$525.00 for the Extension of Time in responding to the Office Action. No other fee is believed due by the Applicants; however, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,

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